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ABSTRACT

Hypothesizing that positive change in students' attitudes concerning leadership behavior would result from participation in a basic level five-week course at the National Outdoor Leadership School (NOLS), 80 student participants (16 years or older) were pre- and post-tested for attitudinal change. Using the Leadership Opinion Questionnaire (LOQ), the subjects were tested on the first day of the course and again five weeks later at its conclusion. To establish a baseline criterion with which comparisons could be made, the leadership instrument was also administered to the NOLS Director, General Manager, and Assistant General Manager, and a NOLS Staff Model was established which provided a leadership norm of high in consideration and average in structure. Subjects were classified by course, type of expedition (wilderness, mountaineering, or biology), age group, education level, previous camp experience, and age. Data were analyzed according to these characteristics by applying a t-test for paired samples, using pre- and post-course scores. Results indicated there was: no positive change in the students' attitudes toward leadership behavior; a decrease in consideration scores among those who had graduated from college, had had previous camp experiences, and had participated in the Wilderness Expedition. It was suggested that the results might have been different had the subjects been tested at a later date. (JC)

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The Pennsylvania State University

The Graduate School

College of Health, Physical Education and Recreation

Change in Leadership Behavior Attitudes Effected by Participation in Basic Courses at the National Outdoor Leadership School

A Thesis in

Recreation and Parks

by

Edward Draper Baker, Jr.

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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CHAPTER I

INTRODUCTION AND STATEMENT OF THE PROBLEM

Tocqueville, in his travels in America in the 1830's, observed the pioneer trying to carve a home for himself out of the vastness of the American wilderness. He found to his surprise that the settler, who lived so close to the beauty of nature, had only one thought, and that was to subdue nature. The pioneer after all was trying to survive, and beyond that to prosper. It was a choice between the Indian and himself, or a wooded hillside and his corn. He looked favorably to the pastoral aspects of nature, not the wilderness aspects. Appreciation, after all, requires perspective, and perspective requires distance.

> The pioneer, in short, lived too close to wilderness for appreciation. Understandably, his attitude was hostile and his dominant criteria utilitarian. The conquest of wilderness was his major concern. (Nash, 1973, p. 24)

The pioneer and wilderness appeared to be locked in mortal combat: either the one must conquer, or the other surely would.

It does not seem unusual then that appreciation of the wilderness did not arise on the frontier, but rather in the cities. In America, public appreciation of the wilderness increased steadily as the nation's pioneer past receded. In 1851, Thoreau expressed his opinion that, "In Wildness is the preservation of the world," and he and other Transcendentalists fostered the idea through the middle of the nineteenth century. Muir, under whose direction the Sierra Club was formed in 1892, was the outstanding spokesman for wilderness from the 1870's till

the 1910's. Later Leopold, then Marshall, under whose direction the Wilderness Society was formed in 1935, were leaders of the wilderness movement.

During this period the first national park was set aside (Yellowstone, 1872) and the National Park Service was formed (1916). Since that time, the federal government has set aside for preservation a considerable amount of wilderness area, particularly as a result of the Wilderness Preservation Act signed into law in 1964.

This reversal, from conquest to preservation of wilderness, is quite a change for civilized Western man, and must be viewed as a positive change as man begins to respect his environment more. However, along with this change, the use of wilderness areas as recreational sites has increased as well.

> Growth in wilderness recreation use has been climbing steadily since the end of World War II, averaging approximately 10 percent per year while population has grown only about 2 percent per annum. (Stankey, 1972, p. 89-90)

Backpacking equipment manufacturers report gains in sales of over 500 percent, and parents are being urged to take their families backpacking and mountaineering in magazines such as Better Homes and Gardens, Parents' Magazine, and Esquire. Several magazines which deal exclusively with backpacking, mountaineering, and related activities have begun publication. Mountaineering schools have had a rebirth, "Attendance at Yosemite's mountaineering school alone has grown from 100 students in 1968 to 724 this year [1973]." (Peak Traffic, 1973, p. 49)

With increased use of wilderness, damage to the wilderness environment has also increased. In fact, it has come to such a point that Kemsley (1973) has ironically described the American wilderness as being loved to death.

> The special problems created by this unprecedented use of the backcountry are litter (which is most obvious), trail erosion, destruction of trees and plants from use of detergents and from the indiscriminate elimination of human wastes, and the destruction of delicate alpine ecosystems. (Kemsley, 1973, p. 111)

Injuries to people in the wilderness environment has likewise risen.

> Last year (1972), climbing deaths in the U.S. jumped to 49, more than twice the 1970 count. Yosemite, which had no climbing fatalities in 1971 and 1972, has already had six deaths this year, including two 17-year-old boys who tried to scale a cliff using a piece of backyard clothesline. (Peak Traffic, 1973, p. 49)

The question then arises of just whose responsibility is it to direct wilderness enthusiasts in the conservation of our wilderness areas, and who is around to perform rescue operations when they are needed. In addition, what is the background and training of the staffs that are manning the suddenly popular mountaineering and adventure type schools and camps?

In 1965 Paul Petzoldt founded the National Outdoor Leadership School (NOLS) hoping to produce almost an elite corps of wilderness leaders trained to help alleviate these problems. Petzoldt, having had a career as director of the American School of Mountaineering, as an instructor of the Army's Tenth Mountain Division, and as Chief Instructor at the Colorado Outward Bound School at its inception, had long been involved with mountaineering and wilderness leadership. He had foreseen

the growth in popularity of mountaineering and backpacking, and likewise the growth in mountaineering schools, college courses which offered these activities, and camps where such activities are a large part of the program; and he was concerned about the leadership of these programs.

> According to our standards, there are few leaders capable of undertaking such adventure programs with safe and rewarding results. Our school, unique in the field of outdoor leadership training, produces graduates who, in most cases, have the technical knowledge and the motivation to be able to organize and plan youth adventure outings from the beginning to end. (NOLS, 1971, p. 1)

NOLS courses are skill oriented, as mountaineering skill is basic to mountaineering leadership; but, what sets NOLS apart from the standard mountaineering school is the emphasis on leadership development. "NOLS offers a program of leadership and conservation to young people who will help to spread a revolutionary wilderness outlook and camping ethic." (NOLS, 1972, p. 1)

If wilderness areas are to survive in an overpopulated and over-mechanized America, people with the necessary skills and leadership credentials must be trained. For, to use Petzoldt's words, "Even after all of the wilderness laws are passed, there will still be only one way to insure preservation, and that is through the education of users in the techniques, skills, and methods that enable them to enjoy and still conserve." (Petzoldt, 1974, p. 14) The objectives of the National Outdoor Leadership School indicate that it is endeavoring to produce these essential leaders. However, there has been no systematic research conducted at NOLS to gauge the possible change in leadership behavior or attitudes of its students. This research was conducted to contribute to just such an understanding of the NOLS program.

Statement of the Problem

The purpose of this study was to determine if change in the attitudes concerning leadership behavior of the participants was effected by participation in a basic level five-week course of the National Outdoor Leadership School.

A subproblem of the study was to establish a baseline criterion from the School staff's perception of desirable leadership behavior which could be used as a model for comparison with post-course attitudes of the students.

Hypotheses

It was hypothesized that the students' attitudes concerning leadership behavior would change in a positive direction as a result of participation in a basic level five-week program at the National Outdoor Leadership School, and further, that this change would be evidenced by difference in the pre- and post-course scores according to:

1. The course in which the student participates
2. The type of expedition in which the student participates
3. The age level of the student
4. The education level of the student
5. Whether the student had had previous camp experience or not
6. The sex of the student

Delimitations

This study was delimited to only the students in one course chosen from the four scheduled Biology Wilderness Expeditions, the students in two courses chosen from the five scheduled Mountaineering

Expeditions, and the students in three courses chosen from the sixteen scheduled Wilderness Expeditions at the National Outdoor Leadership School in the Summer of 1974.

Definitions

Leadership behavior--that behavior of an individual which initiates and maintains structuring effects in interaction with a social system.

Basic Assumptions

It was assumed that all of the subjects had the capacity to exhibit leadership behavior, and that this could be characterized by a numerical value arrived at through a pencil-and-paper test. It was also assumed that the behaviors of the subjects in actual leadership situations would follow the attitudes thus characterized.

Limitations

Leadership is quite an obscure area to research, and there are a number of different opinions even among experts in the field as to what it involves. For this reason, the basic assumptions of this study are somewhat open to debate. The greatest amount of discussion would concern whether leadership behavior could be identified and isolated to two areas, consideration and structure, at all, let alone through a pencil-and-paper test. The assumption that behavior follows attitude is likewise somewhat open to debate.

Another possible limitation is that the type of program presented by NOLS, and the expense of the program, may cause it to have a limited

appeal in terms of numbers of individuals and type of individuals, thus providing a biased population.

CHAPTER II

REVIEW OF LITERATURE

In this chapter, a review of the literature pertaining to this study of change in the attitudes concerning leadership behavior of students participating in a basic five-week course at the National Outdoor Leadership School is presented. It is divided into four parts. The first of these presents information available about the National Outdoor Leadership School (NOLS) and related programs. The second part summarizes various leadership theories. The third part presents leadership training research. The fourth presents information concerning available leadership instruments.

NOLS and Related Programs

One research study has been conducted on the National Outdoor Leadership School program. In it, Henry (1973) analyzed reasons for participating in a NOLS expedition; "The objective was to identify, measure, and analyze young people's reasons for engaging in an educational/recreational use of wilderness." (Henry, 1973, p. 1) He found that learning about wilderness and mastering the related outdoor skills were the most important reasons. Leadership was found to be of only relative importance.

A number of articles have also been written about the NOLS program. The first of these identified was that by Horn (1966). The article, "Lessons in Adventure," described the program and experiences

of the School from a student's viewpoint. Its author was a NOLS student in the School's first year. Horn related the main purpose of the School as the development of qualified outdoor leaders and supplied the following quote from School founder Petzoldt as an underlying reason for the founding of the School. "Too often outdoor leaders for the new adventure programs were not really qualified. This lack of good leadership was ruining vacations, threatening safety." (Horn, 1966, p. 767)

Three later articles by Price (1968), Howard (1969), and Esquire (1972) appeared in the popular press--Field and Stream, Life, and Esquire, respectively, and seemed more geared towards advertising the School's existence. Price attempted to describe the NOLS program from a girl's point of view, while Howard keyed primarily on Petzoldt. The Esquire article was little more than a photo essay describing a winter ski mountaineering session at NOLS. Nevertheless, each of the articles emphasized the leadership training aspect of the School. Typifying this emphasis is the following statement, "'This is no summer camp for fun and games,' Paul Petzoldt, director of NOLS, told us. 'It's a school to train leaders!'" (Price, 1968, p. 127) Another article, Rankin (1972) described the NOLS program and philosophy and was conspicuous because of the fact that it followed two articles on Outward Bound Schools and provided a comparison between the more popular Outward Bound program and that of NOLS.

Most useful in getting to know the NOLS program is the "NOLS Course Descriptions," revised each year and sent to prospective students. "NOLS Course Descriptions" written in 1971, 1972, and 1973 were reviewed.

Each of these provided information on the history and philosophy of NOLS, as well as the need for leadership in our wilderness areas, besides concisely describing the various NOLS courses.

The "new adventure programs," which Petzoldt mentioned in the quote from Horn (1966) in a preceding paragraph, are college programs in mountaineering and camp programs which use mountaineering as a stressful educative experience. Some research and articles were found on such programs.

Both Olympic College in Washington and Alaska Methodist University in Alaska teach mountain climbing as a "carry-over" physical education activity. In a study by Jewell (1963), the Olympic College Basic Campcraft Course was evaluated by the 268 persons who had completed the course between 1951 and 1961. This course was further described by Bates and Jewell (1964). Linder (1967) described the Alaska Methodist University program. Also in the article, he presented the case for teaching mountaineering in university physical education programs maintaining that, "The opportunity of offering Americans instruction in an outdoor activity that offers so much recreation for so many people for so little expense should not be bypassed." (Linder, 1967, p. 57) The First National Conference on Outdoor Pursuits in Higher Education was held in February of 1974 at Appalachian State University to discuss the use of mountaineering and "Outward Bound" type activities in the university curriculum. The fact that there were representatives from colleges in 21 states and three Canadian Provinces attest to the widespread use or interest in such programs.

The use of mountaineering as a stressful program to foster individual development is the concept behind the Outward Bound Schools and other similar camp programs. A number of studies have looked at these programs. Two such studies are those of Kelly and Baer (1968) and Koepke (1973). In the first study, Kelly and Baer attempted to determine the feasibility of using the Outward Bound experience as an alternative to institutionalization for adolescent delinquent boys. The investigators found that the experience did seem to be an effective means of promoting positive change in the boys. Koepke's research assessed the effects of Outward Bound participation on anxiety levels and self concept. She found that at the conclusion of the Outward Bound courses the participants viewed themselves more positively than at the beginning of the course and that their perceptions of what they are more closely approached what they would like to be.

Theories of Leadership

Everyone is involved in leadership, either as a leader or follower, yet just what leadership is, is still obscure and elusive and open to individual opinion. It is perhaps for this reason that there is such a mass of literature available on the subject. However, four major themes may be traced historically in the study of leadership; these are the great man, traitist, situational, and behavioral approaches.

The analysis of the lives of great men characterized most of the early literature. Men and women, such as Caesar, Alexander the Great, Elizabeth I, Hitler, and Churchill, were all examined by their biographers in terms of their leadership ability. "The philosophy

underlying these works was heavily oriented toward the viewpoint that leaders were born and not made, that nature was more important than nurture, and that instinct was more important than training." (Cunningham, 1973, p. 2) Other "great men" type studies attempted to locate certain traits within these men which one could then look for in contemporaries. Thus arose the traitist approach to the study of leadership.

The traitist approach, based on the recognition that an individual's behavior is determined in part by his unique personality structure, grew as the measurement movement in the sphere of psychology came into its own. Leadership was attributed to various traits; among these were height, chronological age, weight, physique, energy, health, appearance, intelligence, integrity, and self confidence. Stogdill in his 1948 survey which reviewed over 120 traitist studies found that, "A person does not become a leader by virtue of the possession of some combination of traits, but the pattern of personal characteristics of the leader must bear some relevant relationship to the characteristics, activities, and goals of the followers." (Stogdill, 1948, p. 64) A number of studies in the field of recreation have used the traitist approach in their research designs. Examples of this would be the studies of Guadagnolo (1968) and Summers, Shuster, and Shuster (1969). These researchers used personality inventories as identifiers of leadership ability; Guadagnolo used the California Psychological Inventory (CPI), while Summers, Shuster, and Shuster used the Minnesota Teacher Attitude Inventory (MTAI). In both studies it was concluded that the

inventories used did have predictive validity in terms of identifying successful leadership.

In addition to studying psychological factors (or perhaps out of frustration over the inability of the traitist approach to adequately describe leadership) some researchers turned to the study of the sociological factors governing leadership--the situational approach. "Basically, the situational approach maintains that leadership is determined not so much by the characteristics of individuals as by the requirements of social systems," (Cunningham, 1973, p. 3) or, the characteristics of the group. Typical of this point of view was the work of Fiedler (1967), and in the recreation field that of Doty (1960) and McIntyre (1970). The research in this approach used sociometrics, problem-solving, simulation exercises, etc. However, "It came to be recognized that if the analysis of leadership were limited only to situational factors, then the study of leadership, per se, was at a dead end." (Cunningham, 1973, p. 3)

> It is not especially difficult to find persons who are leaders. It is quite another matter to place persons in different situations where they will be able to function as leaders.
>
> The evidence suggests that leadership is a relation that exists between persons in a social situation. Must it then be assumed that leadership is entirely incidental, haphazard, and unpredictable? Not at all. The very studies which provide the strongest arguments for the situational nature of leadership also supply the strongest evidence indicating that leadership patterns as well as non-leadership patterns of behavior are persistent and relatively stable. (Stogdill, 1948, p. 65)

It was this idea that there were certain sorts of behaviors required of all leaders, regardless of the situations in which they function, which led to the behavioral approach. This approach recognized

that both psychological and sociological factors, both individual and situational factors were powerful behavioral determinants. Both of these factors then were utilized, focusing on the leader-in-situation.

The most respected work in this approach has been done by researchers at the Personnel Research Board of the Ohio State University. Under the direction of Halpin, Hemphill, and Coons, two significant dimensions of leadership behavior were isolated, Initiating Structure and Consideration. The Leadership Behavior Description Questionnaire (LBDQ), which looks at these two dimensions, was developed at Ohio State.

Later at Ohio State, Fleishman (1960) developed the Leadership Opinion Questionnaire (LOQ) as an assessment of leadership attitudes, rather than a description of actual behavior, which measured the same two dimensions of Consideration and Structure. "The Ideal LBDQ and Leadership Opinion Questionnaire (LOQ) are used by the leader to indicate his attitude regarding how a supervisor ought to behave as leader of his group." (Stogdill, 1974, p. 188) Thus, through this instrument an individual can assess his own leadership behavior, and as a result, it has been found to be quite useful and acceptable as a training tool.

Leadership Training Research

Although leadership training programs are legion, research on leadership training programs generally seems to be inadequate. This is often attributed to the idea that participants "know" that they are gaining from the programs whether it can be tested or not. Corsini, Shaw, and Blake (1961) surveyed role-playing methods, one of three

major methods of leadership training. Of 102 references listed in their bibliography, very few made any attempt to evaluate the effects of role-playing.

Training in techniques of leadership is the second major method of leadership training and good experimental research seems to be lacking in this area as well. Research on this method of leadership training always seems to show significant positive results. Examples of this are Zeleny (1941), Maier (1953), Klubek and Bass (1954), and Cassel and Schafer (1961).

The greatest mass of research on leadership training is concerned with the method of leadership training known as sensitivity training (otherwise called human relations training, or t-group training). In this area, the Ohio State Personnel Research Board's instruments, the Leadership Behavior Description Questionnaire (LBDQ) and the Leadership Opinion Questionnaire (LOQ) are the most widely used. Using the LBDQ, Stroud (1959), Miles (1965), and Schwarz, Stillwell, and Scanlon (1968) all arrived at inconclusive results regarding the ability of sensitivity training to effect change in leadership behavior. However, using the LOQ, Carron (1964), Ayers (1964), and Biggs, Huneryager, and Delaney (1966) all found positive change in attitudes through the use of sensitivity training. Carron found a "statistically significant change from authoritarian to democratic attitudes in the experimental group," and that, "This change persisted over a 17-month follow-up period." (Carron, 1964, p. 419) Ayers (1964) found positive significant change in Consideration scores and opposing significant changes in Structure scores, but concluded that these changes were not

related to self-scoring of the instrument. Biggs, Huneryager, and Delaney found Consideration scores increased and Structure scores decreased significantly after two weeks of human relations training for potential supervisors of Youth Opportunity Centers. On the other hand, Stephenson (1966) and Asquith and Hedlund (1967) found no significant changes in the attitudes measured by the LOQ as a result of sensitivity training.

Summarizing his review of leadership training research, Stogdill (1974) wrote:

> Results of research suggest that direct training in techniques of leadership result in improved effectiveness as a leader. A relatively large body of research on sensitivity training indicates that such training results in increased leader sympathy with the human relations approach, greater awareness of self and others, and more receptivity to follower initiative and responsibility. The few studies investigating the relationship of training to group performance suggest that follower satisfaction and group cohesiveness tend to increase, while productivity tends to decrease, in response to sensitivity training of the leader. (Stogdill, 1974, pp. 412-413)

Leadership Instruments

A number of leadership instruments were located through Buros' mental measurement yearbooks. These included Cassel and Stancik's Leadership Ability Evaluation (LAE), Cassel's Leadership Q-sort, Mowry's Leadership Evaluation and Development Scale (LEADS), and Fleishman's Leadership Opinion Questionnaire. All but the LOQ received unfavorable reviews. Gibb, in his review of LEADS, went so far as to say, "Psychological research has never been able to identify or assess leadership ability, Mowry's scale is almost certainly just another forlorn chase in this elusive hunt." (Buros, 1972, p. 1528)

In his evaluation of the Fleishman test, however, Gibb was less vituperative. In fact, he praised the LOQ construct. "The analysis of leader behavior, of what leaders actually do, has proved to be the most rewarding research approach to the understanding of leadership." (Buros, 1972, p. 1530) He went on to say later in the review, "This is a convenient training aid which may be usefully employed in training evaluation." (Buros, 1972, p. 1531) The Doppelt and Kirchner reviews of the Fleishman instrument were also positive. They both concluded that, "It seems well suited for research activities." (Buros, 1965, p. 1372)

Another leadership instrument available is the Dimock Leadership Inventory whose theoretical construct is that those who score high in democracy rather than authoritarianism are expected to do well in leadership situations. Dimock provided 31 citations in the following areas to back up this construct.

> Studies have been carried out in children's groups, in class rooms, business and industry, in the armed forces, and in families. All of these studies support the conclusion that participative leadership is more likely to achieve the objectives desired in the different situations than dominant leadership. (Dimock, 1963, 3-4)

Lassey also supported the Dimock construct in saying: "The participative process works better than any alternative process." (Lassey, 1971, p. xiii) On the other hand, Anderson (1959) conducted a review of 49 experimental studies in which authoritarian leadership had been compared with democratic leadership. The author concluded that, "The evidence available fails to demonstrate that either authoritarian or democratic leadership is consistently associated with higher

productivity," and that, "The authoritarian-democratic construct provides an inadequate conceptualization of leadership behavior." (Anderson, 1959, p. 212)

CHAPTER III

PROCEDURES

In this chapter the procedures used in the study of change in the attitudes concerning leadership behavior of students participating in a basic level five-week course at the National Outdoor Leadership School are presented. The chapter is divided into five parts: subjects, program, instrument, collection of data, and treatment of data.

Subjects

The population being studied consisted of all students of the National Outdoor Leadership School (NOLS) of 16 years or older, enrolled in a basic level five-week NOLS course. The sample population consisted of volunteers from six such courses including 80 students. The subjects were students of the National Outdoor Leadership School, in Lander, Wyoming, in the Summer of 1974, enrolled in the three types of basic NOLS courses: the Wilderness Expedition, the Mountaineering Expedition, and the Biology Wilderness Expedition. These courses were all five weeks in duration and took place in the Wind and Absaroka Ranges of the Rocky Mountains. Included as subjects were participants in two of the five scheduled Mountaineering Expeditions, three of the 16 scheduled Wilderness Expeditions, and one of the four scheduled Biology Expeditions.

The selection of courses was partially determined by the time framework in which the investigator had to work. In order to supervise pre-course and post-course administration of the instrument by the third

week of July, the courses selected were from those which began during the first half of June. However, as students are assigned to courses on a "first come, first served" basis, and since there is no reason to believe that students chose any one starting date over any other, it was assumed that students were distributed randomly among the courses.

The School Director, General Manager, and Assistant General Manager completed the instrument to establish the NOLS Staff Model. These individuals were used to determine the Model for several reasons. The School's philosophy and program were established by the Director, who is also the School's founder. The General Manager and Assistant General Manager were used because of their overall responsibility for the NOLS program, staff and students, and are instructors themselves. It was deemed necessary to establish norms for the students as the existing norms did not seem to suit the special NOLS population because of the very specific objectives of the School.

Program

The goal of the National Outdoor Leadership School (NOLS), "broadly stated, is to encourage a reverence for our remaining wild areas through training in all aspects of ecology and outdoorsmanship." (NOLS, 1972, p. 1) To achieve this goal the program of instruction includes classes in "leadership, organization, supply, equipment, logistics, mountaineering, rock climbing, glacier and snow techniques, rescue, first aid, survival, accident prevention, fishing, rations, cooking, map reading, safety, advanced camping techniques, and practical conservation and ecology." (NOLS, 1971, p. 1) At the level of entry into the NOLS

Program (the basic level courses being studied by this investigation), the level of instruction of all of these areas is that of beginners, for even those students who are already somewhat experienced may not have had their experience in what NOLS calls "optimum behavior patterns." As the course progresses, the level of instruction is expected to advance to the point where the end of the course is essentially a final examination.

> The final test of all skills, leadership included, comes with the last fives days as small groups walk out of the wilderness on a final expedition or "education problem" foraging for edible plants, catching fish, and in other ways relying on their own initiative for sustenance. (NOLS, 1972, p. 2)

The time format for the five-week courses follows this general pattern: Day 1, equipment issue and initial classes at NOLS equipment headquarters, then transport to roadhead; day 2-day 30, hiking and instruction in wilderness mountain terrain; day 31-day 33, final expedition--hiking out of mountains to roadhead; day 34, pick-up at roadhead, transport to NOLS headquarters and equipment de-issue; day 35, final classes and departure.

Instruction in leadership takes the form of discussions and lectures on "optimum expedition behavior patterns" which emphasize consideration and sensitivity towards other members of the expedition, as well as actual experience in leading and having responsibility for a group of one's fellow students in small hiking parties. Also, in some areas very experienced students help the instructors with instruction of some classes.

It is hard to describe the program of the School merely by listing areas of instruction. To use the words of Jon Hamren, Director

of Field Operations at the School, "Our school offers a unique experience which one must go through to fully understand."

Instrument

The instrument used in this study was the Leadership Opinion Questionnaire (LOQ) developed by Fleishman (1960). It measures attitudes concerning leadership behavior, and specifically measures two dimensions of those attitudes: Consideration (C) and Structure (S). Definitions of these terms are:

> Consideration (C). Reflects the extent to which an individual is likely to have job relationships with his subordinates characterized by mutual trust, respect for their ideas, consideration of their feelings, and a certain warmth between himself and them. A high score is indicative of a climate of good rapport and two-way communication. A low score indicates the individual is likely to be more impersonal in his relations with group members.
>
> Structure (S). Reflects the extent to which an individual is likely to define and structure his own role and those of his subordinates toward goal attainment. A high score on this dimension characterizes individuals who play a very active role in directing group activities through planning, communicating information, scheduling, criticizing, trying out new ideas, and so forth. A low score characterizes individuals who are likely to be relatively inactive in giving direction in these ways. (Fleishman, 1969, p. 1).

There are 40 items on the questionnaire, and the answer format, depending on the item, is one of these three: (1) Always, Often, Occasionally, Seldom, Never; (2) Often, Fairly often, Occasionally, Once in a while, Very seldom; or (3) A great deal, Fairly often, To some degree, Once in a while, Very seldom. Examples of two questions are:

Do personal favors for persons under you	( ) Often ( ) Fairly often ( ) Occasionally ( ) Once in a while ( ) Very seldom

Emphasize meeting of deadlines	( ) A great deal ( ) Fairly much ( ) To some degree ( ) Comparatively little ( ) Not at all

Internal consistency reliability, test-retest reliabilities, intercorrelations between the two scales, and validity were considered by the author of the instrument. The summary of the results follows:

> These scales were shown to be reliable and independent in a wide variety of situations. Internal consistency as well as test-retest reliability was assessed. Validity was evaluated through correlations with independent leadership measures, such as merit rating by supervisors, peer ratings, forced-choice performance reports by management, and leaderless group situation tests. Relatively low validities were found for the particular criteria employed, although a few statistically significant correlations were found.
>
> The questionnaire scores have been found to be sensitive for discriminating reliably between leadership attitudes in different situations as well as for evaluating the effects of leadership training. (Stogdill and Coons, 1957, pp. 132-133)

A second instrument, the National Outdoor Leadership School Student Personal Information Questionnaire (Appendix B) was used to obtain background material on the subjects. It was completed by the subject and mailed to the School with the tuition payment. From this instrument was gathered information concerning the subject's sex, age, highest year of school completed, and whether or not the subject had had previous camp experience.

Collection of Data

The instrument was administered twice to the subjects during their stay at NOLS headquarters in Lander, Wyoming. It was administered on the first day of their course at a break in their equipment issue, and also on the day of their departure from the NOLS headquarters at

the end of their five week course. At both times the instrument was administered to the entire class at the same time by the General Manager or Assistant General Manager of NOLS and the investigator. Every attempt was made to administer the pre-test and the post-test under similar environmental conditions. Since the different classes had different starting and ending dates, the instrument was administered to the different courses on separate days.

Prior to the administration of the instrument to the subjects, the Director, General Manager, and Assistant General Manager of the National Outdoor Leadership School completed the instrument. Immediately afterwards, the instrument was discussed, and the investigator asked their views concerning the relationship of the instrument to the NOLS program.

Data on the subjects were obtained through the General Manager of NOLS from each subject's National Outdoor Leadership School Student Personal Information Questionnaire.

Treatment of Data

The data obtained from the instrument scores of the School Director, General Manager, and Assistant General Manager were combined to establish the NOLS Staff Model as a basis for comparison with the subjects' scores. While the School Staff's scores were compared to a norms table for general supervisory personnel (Appendix A), the NOLS Staff Model was used as the norm for NOLS students.

The pre-course score and post-course score for each of the subjects were categorized into the appropriate group for each variable

and were statistically analyzed using a t-test for paired samples. Thus, each subject was included for analysis in:

1. One of six different courses
2. One of three different types of expeditions
3. One of three different age groups
4. One of four different educational levels
5. One of two groups according to sex, and
6. One of two groups regarding previous camp experience

In presentation, the findings were in two major divisions: course related variables, the first two classifications; and subject background related variables, the last four.

CHAPTER IV

ANALYSIS OF DATA

In this chapter the analysis of the data of the study of change in the attitudes concerning leadership behavior of students participating in a basic level five-week course at the National Outdoor Leadership School is presented. It is divided into five parts: participant profile, NOLS Staff Model, student attitudes, change in attitudes according to course and type of expedition, and changes in attitudes according to participant backgrounds.

Participant Profile

The courses were generally very similar in their participant composition. The ages of the participants were primarily in the range of 16-22 years, and the majority of individuals, in almost every course, was either in college or just out of high school. Those who had had no previous camp experience composed one-third or less of the course, and, for the most part, females were in a minority (Table I).

One Wilderness and one Mountaineering course differed slightly from the aggregate profile, neither of the courses had a subject in the oldest age group, and also there were very few subjects who were in college or college graduates. The Wilderness course also was the only course where the female subjects outnumbered the male. The Biology Wilderness course differed from the general profile in that it had only one subject still in high school, while a second Mountaineering course had only one female (see Table I).

Table I

Subject Profile[a] by Course

Characteristic	Mountaineering A	Mountaineering B	Wilderness A	Wilderness B	Wilderness C	Biology	Total
Number of Participants	13	13	12	16	12	14	80
Age							
16-18	10	5	5	8	10	5	43
19-22	3	5	5	5	2	6	26
23-45	0	3	2	3	0	3	11
Education Level							
In High School	6	3	3	6	7	1	26
High School Graduate	6	2	3	4	3	4	22
In College	0	4	4	3	1	5	17
College Graduate	1	4	2	3	1	4	15
Previous Camp Experience							
Yes	9	10	10	10	8	13	60
No	4	3	2	6	4	1	20
Sex							
Male	12	11	7	11	5	7	53
Female	1	2	5	5	7	7	27

[a]Number of persons with stated characteristics.

NOLS Staff Model

Consideration (C) and Structure (S) represent the two dimensions of attitudes concerning leadership behavior which the Leadership Opinion Questionnaire (LOQ) identifies (see definitions, p. 22). Whereas the LOQ provided a Norms Table (see Appendix A), special "norms" were deemed to be more appropriate for assessing the participant scores (see Chapter III). These special "norms" are based on the scores of the School staff and are referred to as the NOLS Staff Model. The NOLS Staff Model provided a "norm" of 62.34 on the C score and 51.00 on the S score; these are the means of the scores of the three staff who participated in the development of the Model.

The Consideration scores of the Director, General Manager, and Assistant General Manager of the National Outdoor Leadership School were all quite similar, with three points difference from the highest to the lowest (Table II). These scores (61, 62, and 64) were all in the "high" category, representing a percentile rank of 87.5, 90, and 94, respectively, on the Norms Table for General Supervisory Personnel (see Appendix A).

Table II

NOLS Staff Model: Consideration (C) and Structure (S) Scores[a]

Staff Position	C Score	Percentile Rank[b]	S Score	Percentile Rank
Director	62.00	90	49.00	40
General Manager	61.00	87.5	57.00	80
Assistant General Manager	64.00	94	47.00	31
Mean: NOLS Staff Model	62.34	90	51.00	55
Instructor	63.50	92	47.00	31
Instructor	56.00	64	43.00	17.5
Instructor	58.00	75	46.00	28
Instructor	64.00	94	46.00	28

[a]Consideration and Structure defined p. 22.

[b]See Norms Table, Appendix A.

Scores in the dimension Structure varied among the three administrators with two scoring close together (47 and 49), but the third 10 points higher (57) (see Table II). Using the Norms Table for General Supervisory Personnel this placed the two lower scores in the "average" category and the highest score in the "high" category, at the 31st, 40th, and 80th percentiles (see Appendix A). In interviews after discussing the instrument, both the General Manager and Assistant General Manager agreed that where the NOLS program should have the most impact would be on raising the Consideration score. The School Director expressed the thought that the very highly structured leader would not be effective; he illustrated by saying, "Out in the field, you can never say never, and you can't always say always."

Other individual instructors were also tested; however, as this testing was not conducted in a random fashion (systematic sampling), the scores for these instructors (although they generally supported the scores of the School Director, General Manager, and Assistant General Manager) were not included in the NOLS Staff Model (see Table II). They are presented for general information only.

Student Attitudes

Student attitudes, as indicated by mean scores at the end of the courses, and using the NOLS Staff Model as the norm, were generally lower than the norm for both Consideration and Structure (see Table III). The student mean C score was 5.43 points below and the mean S score 6.44 points below the NOLS Staff Model norm.

Since the age range and educational level approximated that of college students, when the post-course NOLS participant scores were compared to University students on the Norms Table (see Appendix A), it was found that the NOLS participant mean C score was at the 75th percentile and the mean S score at the 38th percentile.

Table III

Student Post-Course Attitudes

Group	C Score[a]	S Score[a]
NOLS Staff Model	62.34	51.00
All Subjects	56.91	46.56
Mountaineering	56.77	45.65
Biology	56.21	48.29
Wilderness	57.25	46.55

[a] Consideration and Structure defined p. 22.

Changes in Attitudes According to Course and Type of Expedition

No statistically significant change in attitudes concerning leadership behavior was found for any of the specific courses or the group as a whole. However, when the specific courses were aggregated by type of expedition, a statistically significant change was found for participants in the Wilderness Expedition courses on the Consideration score. There were no significant changes relating to the Structure score (Table IV).

The mean Consideration score for all three Wilderness Expeditions went down from pre-course administration of the instrument to post-course. Viewed as a total group this decrease was significant at the .05 level. Although the mean Structure score for each of the three Wilderness Expeditions showed an arithmetical increase, it was not enough to be statistically significant.

Whereas the mean Consideration scores for the Wilderness Expeditions decreased, scores for both of the Mountaineering Expeditions increased arithmetically; however, not enough to be significant either individually or grouped. The mean Structure scores for one Mountaineering Expedition increased, while the other decreased.

The Biology Wilderness Expedition showed negative (decrease) change in both mean Consideration score and mean Structure score from pre-course to post-course administration of the instrument. Again, this arithmetical change was not statistically significant.

Table IV

Changes in Attitudes According to Course and Type of Expedition

Type of Expedition	Variable	Number of Cases	Mean	Standard Deviation	t-Value[a]
Total Group	Pre C[b]	80	58.16	6.4	1.94
	Post C		56.91	6.3	
	Pre S[b]	80	45.84	5.6	-1.06
	Post S		46.56	6.9	
Mountaineering	Pre C	26	55.96	5.9	-0.72
	Post C		56.77	7.1	
	Pre S	26	45.27	5.1	-0.30
	Post S		45.65	7.8	
Course A	Pre C	13	57.31	6.2	-0.93
	Post C		58.54	4.7	
	Pre S	13	45.38	5.7	-1.33
	Post S		46.92	6.6	
Course B	Pre C	13	54.62	5.4	-0.21
	Post C		55.00	8.7	
	Pre S	13	45.15	4.8	0.34
	Post S		44.38	8.9	
Biology	Pre C	14	58.79	6.9	1.90
	Post C		56.21	7.1	
	Pre S	14	48.43	6.5	0.11
	Post S		48.29	6.4	
Wilderness	Pre C	40	59.38	6.3	2.32 *
	Post C		57.25	5.8	
	Pre S	40	45.30	5.5	-1.24
	Post S		46.55	6.5	

Table IV (continued)

Type of Expedition	Variable	Number of Cases	Mean	Standard Deviation	t-Value[a]
Wilderness					
Course A	Pre C[b]	12	58.83	6.7	1.15
	Post C		57.17	6.1	
	Pre S[b]	12	42.83	5.5	-0.56
	Post S		43.75	4.5	
Course B	Pre C	16	60.56	5.0	1.88
	Post C		58.00	5.6	
	Pre S	16	47.00	5.4	-0.36
	Post S		47.68	7.5	
Course C	Pre C	12	58.33	7.8	0.96
	Post C		56.33	6.1	
	Pre S	12	45.50	5 2	-1.44
	Post S		47.83	6 5	

[a]Positive t-values identify negative change whereas negative t-values identify positive change.

[b]Consideration and Structure defined p. 22.

*Significant at the ,05 level.

Changes in Attitudes According to Participant Backgrounds

Two incidents of statistically significant change were found in the participant attitudes concerning leadership behavior according to the several variables of the individuals' backgrounds. These were both found in the Consideration dimension of those attitudes, and were in the variable of education level and previous camp experience (Tables V and VI).

For those subjects who had completed college, the negative change in mean Consideration score from pre-course administration of the instrument to post-course was found to be significant at the .01 level. For the scores at the other education levels, both Consideration and Structure, no specific pattern could be identified for the change in mean score.

There was a statistically significant negative change in the Consideration score from pre-course to post-course likewise for those subjects who had had previous camp experiences. No other differences in mean Consideration scores or mean Structure scores according to previous camp experience were significant (see Table VI).

There were no statistically significant changes in the mean Consideration scores or mean Structure scores according to the age or sex of the subjects. A pattern was identifiable though, between age and change in mean Consideration score. For each age group there was a negative arithmetical change, but those who were the youngest decreased the least, while those who were the oldest decreased the most (see Tables VII and VIII).

Table V

Changes in Attitudes According to Education Level

Level	Variable	Number of Cases	Mean	Standard Deviation	t-Value[a]
In High School	Pre C[b]	26	56.54	6.3	-0.22
	Post C		56.81	5.0	
	Pre S[b]	26	44.69	5.4	-0.90
	Post S		45.65	6.3	
High School Graduate	Pre C	22	60.36	6.2	1.45
	Post C		59.09	5.1	
	Pre S	22	44.32	5.6	-1.27
	Post S		45.55	5.5	
In College	Pre C	17	57.35	6.9	0.59
	Post C		56.41	8.6	
	Pre S	17	47.76	5.9	-1.06
	Post S		49.47	7.4	
College Graduate	Pre C	15	58.67	5.9	3.00**
	Post C		54.47	7.4	
	Pre S	15	47.87	5.0	0.72
	Post S		46.33	8.8	

[a]Positive t-values identify negative change whereas negative t-values identify positive change.

[b]Consideration and Structure defined p. 22.

**Significant at the .01 level.

Table VI

Changes in Attitudes According to Previous Camp Experience

Past Experience	Variable	Number of Cases	Mean	Standard Deviation	t-Values[a]
Yes	Pre C[b]	60	57.93	6.6	2.01*
	Post C		56.43	6.5	
	Pre S[b]	60	46.32	5.9	-1.15
	Post S		47.18	6.0	
No	Pre C	20	58.85	6.0	0.38
	Post C		58.35	6.0	
	Pre S	20	44.40	4.5	-0.19
	Post S		44.70	6.7	

[a]Positive t-values identify negative change whereas negative t-values identify positive change.

[b]Consideration and Structure defined p. 22.

*Significant at the .05 level.

Table VII

Changes in Attitudes According to Age Group

Group	Variable	Number of Cases	Mean	Standard Deviation	t-Value[a]
16-18	Pre C[b]	43	58.26	6.5	0.61
	Post C		57.74	5.1	
	Pre S[b]	43	44.72	5.6	-1.10
	Post S		45.53	6.1	
19-22	Pre C	26	58.12	6.7	1.24
	Post C		56.58	8.1	
	Pre S	26	47.00	5.6	2.10
	Post S		48.48	7.4	
23-45	Pre C	11	57.91	5.6	2.10
	Post C		54.45	5.6	
	Pre S	11	47.45	5.6	0.78
	Post S		45.82	8.2	

[a]Positive t-values identify negative change whereas negative t-values identify positive change.

[b]Consideration and Structure defined p. 22.

Table VIII

Changes in Attitudes According to Sex

Sex	Variables	Number of Cases	Mean	Standard Deviation	t-Value[a]
Males	Pre C[b]	53	58.42	6.2	0.90
	Post C		57.77	6.5	
	Pre S[b]	53	45.34	5.7	-1.28
	Post S		46.32	6.9	
Females	Pre C	27	57.67	6.8	1.89
	Post C		55.22	5.8	
	Pre S	27	46.81	5.5	-0.16
	Post S		47.03	7.1	

[a]Positive t-values identify negative change whereas negative t-values identify positive change.

[b]Consideration and Structure defined p. 22.

CHAPTER V

SUMMARY AND CONCLUSIONS

In this chapter the summary and conclusions of this study of change in the attitudes concerning leadership behavior of students participating in a basic level five-week course at the National Outdoor Leadership School are presented. The chapter is divided into five parts: summary of procedures, summary of findings, conclusions, discussion and implications, and recommendations for further study.

Summary of Procedures

The subjects were 80 students who participated in basic level five-week courses at the National Outdoor Leadership School (NOLS) during the Summer of 1974. They were in six separate courses and included all of the three different types of basic level NOLS expeditions. Three courses were Wilderness Expeditions, two were Mountaineering Expeditions, and one was a Biology Wilderness Expedition.

The instrument used to determine the change in the attitudes of the subjects concerning leadership behavior was the Leadership Opinion Questionnaire (LOQ) developed by Fleishman. It was administered to the subjects on the first day of their course at the equipment headquarters of NOLS at a break in their equipment issue. It was again administered five weeks later on the last day of the course prior to the subjects' departure from the School.

To establish a baseline criterion with which comparisons could be made with the subjects' scores, the instrument was completed by the Director, General Manager, and Assistant General Manager of the School. Their scores established the NOLS Staff Model.

The subjects were classified by course, type of expedition, age group, education level, whether or not they had had previous camp experience and by their sex. The data were analyzed according to these characteristics by applying a t-test for paired samples, using pre-course and post-course scores.

Summary of Findings

The NOLS Staff Model was established. It provided the criteria or norm that NOLS students be high in Consideration (C) and average in Structure (S).

The hypothesis that positive change in the students' attitudes concerning leadership behavior would result from participation in a basic level five-week course at the National Outdoor Leadership School was not supported in full by the findings. While the general arithmetical direction for Consideration scores was down slightly, and the general direction for Structure scores was up slightly, there were no variables evidencing statistically significant change in the mean Structure score of the participants; and, a statistically significant change in Consideration score was found for only a few variables; specifically, education level, type of expedition, and previous camp experience. In terms of education level, there was a decrease in Consideration scores among those who had graduated from college which

was significant at the .01 level. For variables in the type of expedition and previous camp experience classifications, a decrease in Consideration score was found to be significant at the .05 level. Specifically, there was significant decrease in scores related to participation in a Wilderness Expedition, and there was likewise significant decrease in scores related to having had previous camp experience.

Conclusions

Based upon the findings and within the limitations of this study, there appears to be little significant change in the attitudes concerning leadership behavior of participants effected by participation in a basic level five-week course at the National Outdoor Leadership School. Significant change, when found, is in a negative direction to what was hypothesized.

Discussion and Implications

The movement of Consideration scores in the direction opposite from what was hypothesized could possibly be related to the timing of the post-course testing. For four weeks the subjects had been away from civilization in a group of 20 or fewer people. This was followed by the final expedition, a four day, 25-35 mile departure from the wilderness with sustenance coming only from foraging. The post-course administration of the instrument was conducted on the following day, when the subjects had just returned to civilization and were for the first time in five weeks able to satiate their desires for civilized amenities. Also, for the first time in five weeks, they were able to

associate with and enjoy the company of people other than their course co-participants. Their feelings at this time could very well have been more self-centered than usual and could have brought about the lower Consideration scores of the post-course testing.

If the findings of this study do indeed represent the actual situation, that there is little change in the leadership attitudes of participants of basic level NOLS courses, this might be explained by looking at the focus of the program. As the basic level NOLS courses are very skill oriented, little opportunity for actual practice of leadership appears to exist, and as a result, there is little opportunity for change of leadership attitudes. This study was not designed to look at the advanced NOLS courses--the Instructors' Courses. These courses, for the most promising graduates of basic NOLS courses, emphasize teaching techniques and leadership development more, and also provide more time and opportunity for leadership experiences in the field. The overall objective of NOLS is to produce a trained leadership, skilled in wilderness preservation techniques, and capable of teaching those skills to others. It is a perfectly valid trade-off for NOLS to stress skill development in the basic courses and leadership development in the advanced courses, but the School must be aware that it is making that trade-off. That is why evaluation such as was made in this study is necessary.

Those people who should be most experienced, college graduates and those who had had previous camp experience, are precisely the groups which showed significant decrease in their Consideration score.

This might be a result of the basic level of the program and the youthfulness of many of the participants. Those who are already skilled may have taken the basic level courses only because there was no other entry level program, and become bored by staying at the level of the less experienced, younger participants. This in turn would have affected their Consideration attitudes. Or, while not actually "bored," they may have become disenchanted with the program because they were not able to further their own skill or personal development to their own expectations.

In light of this, some sort of stratification for participation in NOLS basic courses seems to be called for, and NOLS has begun this stratification. In 1974, a 16 year old could participate in any basic level NOLS course, but for 1975 that is true only for the Wilderness Expedition. For the Biology Expedition there is the added stipulation that the student must have completed his junior year in high school, and to participate in a Mountaineering Expedition the student must be 18 years old. This appears to be the right direction for the School to move; however, there would still appear that there would be a need which might be filled by offering a "teacher practicum" Wilderness Expedition and gearing it toward the college graduate group. NOLS is likewise filling this void in its former programs by offering three week outdoor education courses for those over 20 years of age in its 1975 schedule.

Recommendations for Further Study

If this study could have looked more at the actual behavior of the NOLS student and depended less on attitude, it might have given a

better look at the NOLS impact on leadership. Probably an even better look could be had by a longitudinal study which looked at NOLS graduates to see what impact, what leadership they were providing towards the idea of wilderness after they leave the School.

This study could have had an additional variable, and inclusion of such variable in future studies is recommended. Out of almost every basic course there are a couple of students who are invited back to participate in a NOLS Instructors' Course. It would be interesting to identify such subjects so recommended to see if they represented a particular pattern of attitude change or background.

Another investigation would be to evaluate the 1975 or subsequent programs using a format similar to this study to see if the age and schooling stratification makes a difference. Likewise, it is important to see if there actually is change in the attitudes concerning leadership behavior of those students on NOLS Instructors' Courses.

There are many other aspects of the NOLS program aside from leadership development which could be evaluated. One of these is skill development of students, and another the leadership style of the instructor and how it affects student growth.

Perhaps one of the most valid studies which could be done goes back to the reason for NOLS existence--what is the impact of the National Outdoor Leadership School on its resource base, the wilderness.

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APPENDIX A

NORMS TABLE

Table IX

Norms Table[a]

Verbal Description	Percentile	General Supervisory Personnel N=3008 C[b]	S[b]	University Students N=557 C	S
Very High	99	72	68	68	63
	98	69	66	65	61
	97	68	64	64	60
High	95	65	63	63	58
	90	62	60	61	57
	85	60	58	59	55
	80	59	57	58	54
	75	58	55	57	53
Average	69	57	54	56	52
	60	55	52	54	50
	50	53	50	53	49
	40	51	49	51	47
	31	50	47	49	45
Low	25	48	45	48	--
	20	47	44	47	44
	15	46	42	46	43
	10	44	41	45	41
	5	42	38	43	39
Very Low	3	41	36	40	34
	2	40	34	39	33
	1	38	31	28	29

[a](Fleishman, 1969, p. 14), Other tables were provided for: First-Line Administrative Clerks, Foremen, Executives, Middle Managers, Bank Managers, Store and Assistant Store Managers, Educational Supervisors, Supervisory and Head Nurses.

[b]Consideration and Structure defined p. 22.

APPENDIX B

NATIONAL OUTDOOR LEADERSHIP SCHOOL
STUDENT PERSONAL INFORMATION
QUESTIONNAIRE

NATIONAL OUTDOOR LEADERSHIP SCHOOL
STUDENT PERSONAL INFORMATION QUESTIONNAIRE

Course Name _____
Course Date _____

Give your name below as you want it on your diploma. Give it as instructed, "Last, First, Middle." We will see that it is "First, Middle, Last" on the diploma. Please print, plaintly, or type. RETURN THIS FORM TO US IMMEDIATELY.

Name _____ Male ____ Female ____
Last First Middle (or initial)

Telephone Number _____ Married ____ Children ____ Single ____

Height _____ Weight ____ Age ____ Birth Date _____
Month Day Year

Permanent address _____

Name of mother _____

Address of mother _____

Name of father _____

Address of father _____

Names and ages of sisters and brothers _____

School last attended _____

Name and address of school you plan to attend next fall _____

Highest year of school you have completed _____

If in college, or college graduate, give major _____

Minor, or minors _____

Sports participation in high school and college _____

If not in school, give employment status _____

Previous camp experience (names of camps and states where located) _____

_____

(Spacing reduced to fit page.)

APPENDIX C

SUBJECT INFORMATION FROM NOLS
STUDENT PERSONAL INFORMATION
QUESTIONNAIRE

Table X

Subject Information from NOLS
Student Personal Information
Questionnaire

Identification Number	Course	Type of Expedition[a]	Age[b]	Education Level[c]	Previous Camp Experience[d]	Sex
01	1	2	16	1	1	M
02	1	2	17	1	1	M
03	1	2	17	1	1	M
04	1	2	16	1	1	M
05	1	2	22	2	1	F
06	1	2	22	4	1	M
07	1	2	19	2	2	M
08	1	2	17	1	1	M
09	1	2	17	2	2	M
10	1	2	17	2	2	M
11	1	2	18	2	1	M
12	1	2	17	1	1	M
13	1	2	18	2	2	M
14	2	1	41	4	2	M
15	2	1	17	2	1	M
16	2	1	16	1	1	F
17	2	1	16	1	1	M
18	2	1	16	1	1	M
19	2	1	18	2	1	M
20	2	1	22	3	1	F
21	2	1	20	2	1	F
22	2	1	19	3	1	F
23	2	1	21	3	1	F
24	2	1	38	4	1	M
25	2	1	19	3	2	M
26	3	2	18	1	1	M
27	3	2	19	2	1	M
28	3	2	24	4	1	F
29	3	2	22	3	1	M
30	3	2	20	3	1	M
31	3	2	23	4	1	M
32	3	2	18	3	1	M
33	3	2	16	1	2	M
34	3	2	16	1	1	M
35	3	2	16	2	2	M
36	3	2	22	4	2	F
37	3	2	23	4	1	M
38	3	2	19	3	1	M
39	4	1	19	2	1	M
40	4	1	20	3	1	M
41	4	1	24	4	1	F
42	4	1	19	3	2	F

Table X (continued)

Identification Number	Course	Type of Expedition[a]	Age[b]	Education Level[c]	Previous Camp Experience[d]	Sex
43	4	1	19	3	1	M
44	4	1	18	2	1	F
45	4	1	24	4	2	M
46	4	1	16	1	2	M
47	4	1	25	4	1	F
48	4	1	19	2	2	M
49	4	1	16	1	1	M
50	4	1	17	1	1	M
51	4	1	17	1	1	M
52	4	1	16	1	2	M
53	4	1	17	1	1	F
54	4	1	17	2	2	M
55	5	1	18	2	1	M
56	5	1	22	4	1	F
57	5	1	16	1	1	F
58	5	1	17	2	1	M
59	5	1	16	1	1	M
60	5	1	16	1	2	F
61	5	1	17	1	1	F
62	5	1	16	1	1	F
63	5	1	19	3	2	M
64	5	1	17	1	2	M
65	5	1	17	1	2	M
66	5	1	18	2	1	F
67	6	3	16	1	1	M
68	6	3	19	3	1	F
69	6	3	27	4	1	M
70	6	3	18	2	1	M
71	6	3	20	3	2	F
72	6	3	20	3	1	F
73	6	3	20	2	1	M
74	6	3	17	3	1	F
75	6	3	18	2	1	F
76	6	3	23	4	1	M
77	6	3	17	2	1	F
78	6	3	20	3	1	M
79	6	3	21	4	1	F
80	6	3	23	4	1	M

[a]Type of Expedition: 1=Wilderness, 2=Mountaineering, 3=Biology.
[b]Age in years.
[c]Education level: 1=In high school, 2=High school grad, 3=In College, 4=College grad.
[d]Previous Camp Experience: 1=Yes, 2=No.

APPENDIX D

PRE-COURSE AND POST-COURSE CONSIDERATION AND STRUCTURE SCORES

Table XI

Pre-Course and Post-Course Consideration and Structure Scores[a]

Identification Number	Pre C	Post C	Pre S	Post S
01	54	51	53	50
02	56	59	35	33
03	55	56	53	59
04	62	54	47	47
05	62	59	45	47
06	67	68	49	51
07	53	61	44	53
08	57	60	44	42
09	55	60	52	46
10	52	59	38	42
11	60	60	40	41
12	45	51	48	53
13	67	63	41	46
14	59	61	42	36
15	55	53	38	38
16	53	58	44	41
17	59	54	42	45
18	57	46	37	45
19	65	61	45	51
20	48	56	53	47
21	60	60	44	47
22	61	60	32	44
23	52	48	44	40
24	64	61	49	49
25	73	68	44	42
26	60	59	37	38
27	52	54	41	45
28	59	52	47	47
29	46	31	52	64
30	55	59	47	52
31	52	53	47	35
32	62	61	44	41
33	55	65	49	47
34	40	58	43	46
35	53	54	36	39
36	58	52	40	31
37	47	51	48	56
38	52	66	47	41
39	56	56	52	46
40	57	55	46	53

Table XI (Continued)

Identification Number	Pre C	Post C	Pre S	Post S
41	60	54	48	41
42	65	52	47	62
43	64	64	51	48
44	65	61	45	44
45	61	52	45	41
46	59	59	41	46
47	63	49	58	58
48	68	68	38	46
49	61	64	54	41
50	51	57	40	41
51	58	59	44	56
52	51	51	44	42
53	65	63	53	59
54	65	64	46	39
55	62	62	48	54
56	52	44	45	57
57	67	56	39	44
58	62	55	40	41
59	59	50	54	48
60	54	51	41	43
61	62	63	44	37
62	39	54	42	52
63	58	63	49	53
64	58	55	47	46
65	58	60	42	43
66	69	63	55	56
67	66	64	45	43
68	53	53	44	46
69	61	58	56	53
70	66	62	54	55
71	55	49	52	51
72	49	59	52	46
73	63	57	42	38
74	59	60	48	50
75	69	64	39	42
76	50	45	40	53
77	49	44	51	46
78	56	55	60	61
79	66	54	53	52
80	61	63	42	40

[a]Definitions, p. 22